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STILL IN THE LARAMIE COUNTRY, CONVERSE COUNTY, WYOMING.

By CHARLES H. STERNBERG, Lawrence.

I LEFT Lawrence the 11th of July to join my three sons, who had established a camp at Horseshoe Bend, on the Cheyenne river. I traveled by rail to Lusk, Wyo., and then by hack to Warren, in the heart of the Laramie, fifty-eight miles north. The camp was located among the pines, twenty miles north of Warren post office. The heat was so severe that all in camp suffered much from its effects. The Cheyenne river at this point makes a horseshoe bend, and for half a mile ravines cut back in the center of the arc and gradually become shorter. The country here is cut up with cañons and deep gorges, with rough, serrated ridges or buttes between, almost entirely denuded of vegetation. The gorges are fully 600 feet deep, and expose to view nearly the entire series of the Laramie fresh-water deposits. A short distance to the northwest these are overlaid by the Fort Union beds, while below is the Fox Hills Cretaceous formation.

When I reached camp I learned that George had found a fine skeleton of the duck-billed dinosaur *Trachodon*. It consisted of the entire caudal series of eighty-seven vertebræ, having a length of fourteen feet three inches. The sacrum, three feet and four inches long, consisted of nine united vertebræ. The entire pelvis was in position, except one illium, with hind limbs that lacked but one inch of being eight feet long. There were also sixteen continuous ribs, half of the head, and part of the fore limbs.

This specimen has been sent to the National Museum of France. One might go into detail and speak of the great difficulties encountered before we finally succeeded in removing this specimen from the rough region in which it had been entombed, but to enumerate all this would be wearisome. Although greatly hampered by the heat, I was fortunate enough to find three skulls of *Triceratops*, and George found one. The one discovered by my son consisted of a most beautiful and perfect fringe, five feet across and three feet deep; all the back portion of the head was present, and part of the horn cores. This specimen has been opened in the Senckenberg Museum, Frankfurt, and greatly pleases the director, Doctor Dreverman. The second skull for the season I found on the main Schneider creek, just above the cabin of Mr. Nelson, who has a

cattle ranch here. It lay on the crest of a ridge and was largely enclosed in a hard, concretion-like mass of grey sandstone, infiltrated with siliceous material, giving it the consistency of flint. The entire skull was present except one manible, including the rostral and prementary bone. The distance from occipital condyle to end of beak is eighty inches; the horn cores twenty-nine inches long, with a diameter of nine inches; length of nasal horn, eleven inches. So this splendid specimen consists of the entire skull in front of the crest, with the right mandible and prementary. It is six and one-half feet long, and with it are many fragments of the crest, which, with some restoration, will, I hope, complete the skull.

The second *Triceratops* skull I found on the road along the divide between Boggy and Greasewood creeks. I found this under peculiar circumstances. After weeks of fruitless effort on Boggy creek, I concluded to return to our bone bed on Crooked creek. It was a very hot day, and as Charlie, my second son drove along, I nodded off to sleep most of the way; but suddenly my drowsy eyes opened, and I saw the skull, only a short distance from the road over which all the fossil hunters that have visited this country have traveled. It consisted of nearly the entire skull, with the exception of the crest. The third was lying within fifty feet from where my sons hauled out a load of fossils last year. It lay at the forks of a ravine on Crooked creek, and both horn cores had stood up two feet above the shale in which the entire skull was buried. A trail leading down to a spring farther down the ravine passed over the right horn, so it was ground to powder, but the other horn core stood up two feet above the rock. For years men had ridden over this trail to the water hole, and had never seen the horn—another proof that we find in this world what we are looking for, and never notice the other things equally valuable. I supposed here I had a species of *Diceratops* until I saw a *Triceratops* skull in the Field Museum the following December, which is seven feet long, and is an exact counterpart of mine. With the exception of one horn core, the mandibles and prementary, the skull was complete, with the entire crest as well as the front part of the face present. This is the largest skull I have ever collected. These last two specimens I still have on hand. Professor Lull told me three years ago there were but thirteen skulls of this great land saurian known, which has the largest skull of any land animal. Since that time my party have discovered six. The one I sent to the American Museum last year, Professor Osborn writes me, with the exception of the grand one in the Carnegie Museum discovered by

Utterback several years ago, is the most perfect known, and is also new to science.

But all these specimens sink into insignificance compared to the one Charlie found of a *Trachodon* on the South Branch of Schneider creek, twenty miles northwest of Warren. He had had no success whatever, and when we made sport of it he always said that when he did find anything it would be better than anything so far found in the Laramie; and he proved to be a true prophet. There was a little patch of ground on the head of South Schneider we had not explored, and, owing to my discovery of a *Triceratops*'s skull within a mile or so of this region, Charlie took advantage of the opportunity, and, with Levi, drove over to it, while I went on to the camp at the bone bed across the river, on the head of Crooked creek. He discovered the last sacral vertebra and one hind limb of a *Trachodon* sticking out of a high ledge of grey sandstone. On September 4 last we moved our camp over to this specimen. Our outfit consisted of four horses, a heavy lumber wagon, also a buggy and saddle, with tents and camp equipage. It took Charlie and George, with the assistance of Mr. Lon Galbreath, of Warren, over two months to take up and transport this specimen to Edgemont, S. D., where it is now stored awaiting a purchaser; it weighs about 10,000 pounds. I remained with my party until we had uncovered it, cut it in sections, and wrapped them securely with burlap soaked in plaster. One section weighed over 3000 pounds. After days of toil removing the sandstone above the floor on which our duck-bill lay buried, we find the following facts: He had sunk to his death in a bed of quicksand, and the entire skeleton is present except one hind limb and the end of the tail. Five and a half feet of the caudal vertebræ are present, continuous with the sacrum, making seventeen and a half feet altogether, including the complete trunk region. And more wonderful still, the whole skeleton is in the normal position at death, with ribs expanded about five feet across the abdominal walls, and the entire carcass is covered with the skin impressions. When the flesh decayed, and before the ligaments that held the bones in proper alignment one with another had disintegrated, the scales had left impressions on the yielding sand. As the flesh slowly decayed and was carried off by water, it was replaced with sand that took the impression of the skin upon it; so that at last the entire body as it was in death was here reproduced. The front limbs were drawn upwards along the sides of the body as the carcass slowly sank in the quicksand. The head, four feet long, was elevated as if gasping for breath, and the hind foot has

the femur, tibia and fibula doubled on themselves, while the foot from the tarsal joint is stretched downward. The hind feet were thirty-one inches below the pelvis, and were, as I believe, in normal position. I am strengthened in this view by the fact that the "mummy" (so-called by Professor Osborn) that we found three years ago near this specimen, and that is now in the American Museum, had the hind limbs doubled under the body in the same way. This was also true of the specimen first mentioned in this paper. Consequently we must change the pose of these duck-bills from the erect position in which all but one in the American Museum have been mounted. Even that one, however, is simply in the position that an animal who walks on his hind limbs would assume if he fed off the ground. I therefore believe I have discovered sufficient evidence to prove that the *Trachodon* was a swimmer; in fact, we already know that from the one I sent Professor Osborn. The front feet were web-footed; and his skin, with minute scales, shows he was a water animal, instead of land as was always supposed. Now, in addition, I claim that he was far more like a lizard than has been imagined. He walked like a lizard, with body close to the ground and tail dragging out behind. The great trouble with paleontologists has been that they have created a theory and want the facts to support it. For instance, it is taught that the dinosaurs partook of the characteristics of the three great living families, the birds, reptiles and mammals, and consequently they were largely a composite of these three families. Instead of that, as far as I have discovered, in the *Trachodon* line at least, they lived in the water, and only came on the land at the peril of their lives, as they had no means of defense against the king of carnivorous reptiles, *Tyrannosaurus*—a fearful creature, with skull four feet long, and armed with horrid teeth four inches long.

The duck-bill lived in the bayous of the country. He was a powerful swimmer, and could use his great hind limbs, eight feet long, in the same manner as a frog uses his. Or, while feeding on the rushes that lined the sluggish streams, he could plant his powerful hind feet in the sandy bottom, while, with his front ones acting as arms, he could pull into his duck-billed mouth the succulent forage. And as the female went on shore to deposit her eggs in the sand, she crept along like lizards of to-day, the limbs doubled up on themselves, except from the tarsal and carpal joints, which acted as the knee of mammals. They lifted the body sufficiently high to clear the ground, but the tail dragged behind. Consequently he did not stand up like a kangaroo and walk on his hind

feet and end of his tail; nor did he jump like a frog, as this would be a physical impossibility, with a weight of 5000 pounds or more. I greatly regret that our large museums are willing to make the absurd mounts they often make in order to satisfy the credulity of ignorant people. Marsh once said that to doubt evolution is to doubt science, and science is only another name for truth. Consequently men of science have no right to mount extinct forms in a sensational manner to satisfy a sensational public. This wonderful specimen is still in my possession, but I hope soon to ship it to some noted museum, where it may be correctly mounted and preserved.

I also discovered a wonderful deposit of figs a few rods from the *Trachodon* quarry. They fell in the sand among teeth and bones of reptiles and fishes, as well as the impressions of rushes and other water plants, and shell fishes. The sand packed solidly around them, and when they decayed their form was firmly molded in the sand. The cavity thus formed was filled with sand, and an exact cast of the figs was produced. Until now, less than a dozen fossil figs are known to me. I also discovered five beautiful palmetto palms eighteen inches in width, showing the country at the time they grew was like the everglades of Florida, ridges between great marshes, through the center of which ran sluggish streams almost at a level with the near-by ocean. The water was beyond tidewater, however, as it was sweet.